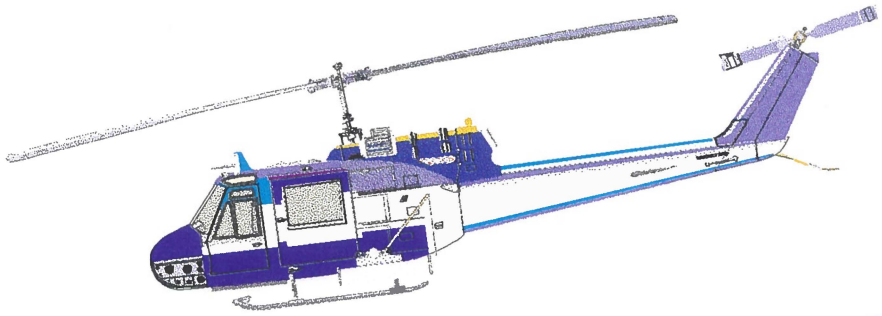
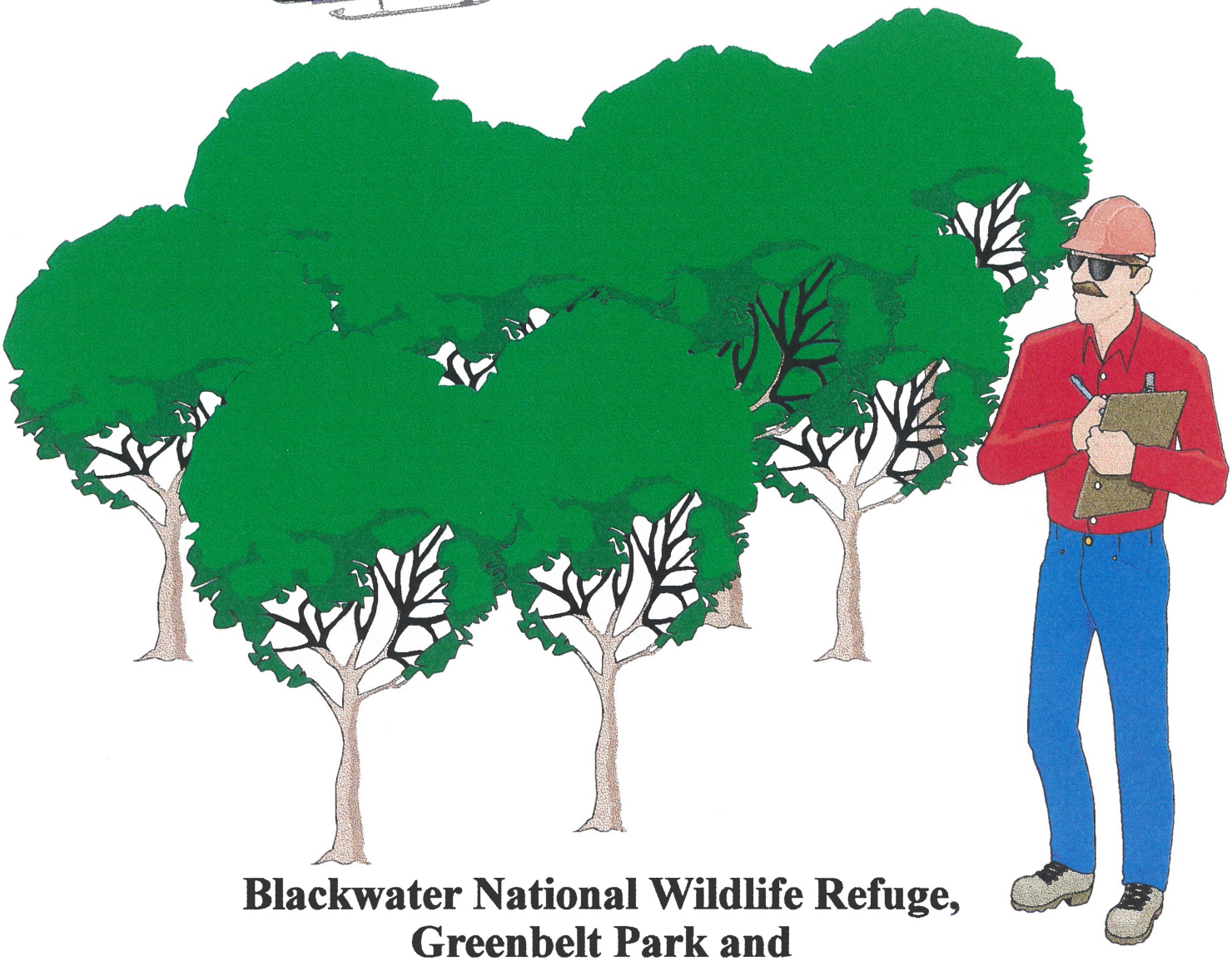
1997 Gypsy Moth Suppression Project Work Plan





Blackwater National Wildlife Refuge,
Greenbelt Park and
Fredericksburg and Spotsylvania National Military Park

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INTRODUCTION

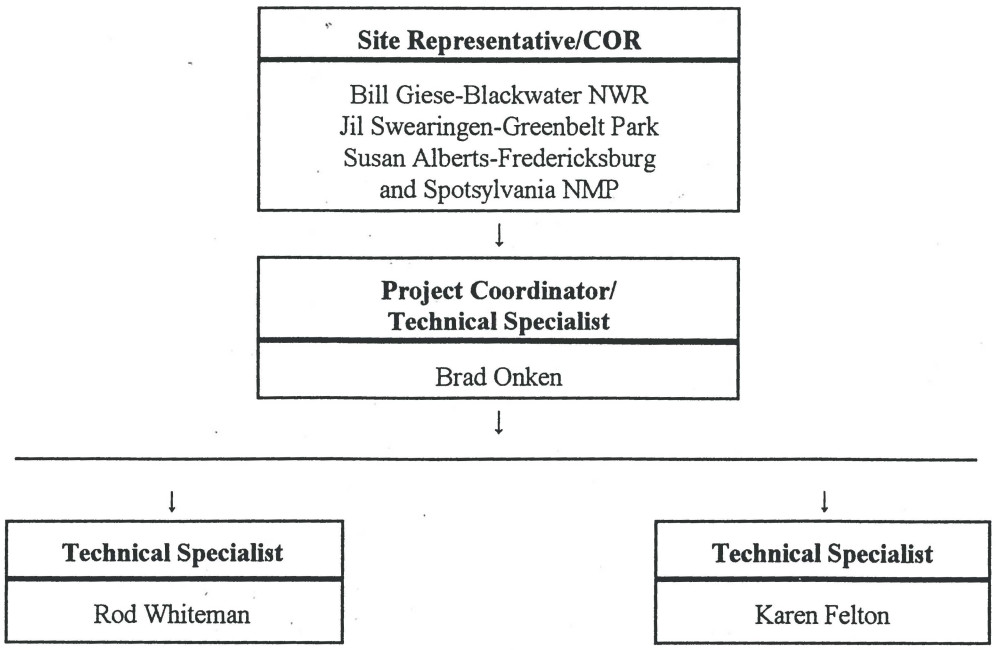
This work plan covers the gypsy moth suppression activities at Blackwater National Wildlife Refuge, Greenbelt Park and the Fredericksburg and Spotsylvania National Military Park.(Figure 1.) The gypsy moth nucleopolyhedrosis virus, known better as Gypchek, will be used on the projects. A total of 1,332 acres will be treated at Blackwater NWR, 860 acres will be treated at Greenbelt Park and 300 acres will be treated at the Fredericksburg and Spotsylvania NMP. All 2,492 of these acres will be treated twice.

The primary treatment objective at each site is to prevent noticeable defoliation (>30 percent) from occurring on more than 20 percent of the treatment area. A second objective is to reduce residual gypsy moth populations below the treatment threshold of 750 egg masses per acre on at least 80 percent of the treatment area.

ORGANIZATION AND RESPONSIBILITIES

The organization for the suppression projects at Blackwater NWR, Greenbelt Park, and the Fredericksburg and Spotsylvania NMP is shown in an organizational flow chart below. Each person is to report to the person directly above them with any problems or concerns.

Organizational Chart for the 1997 Gypsy Moth Suppression Projects at Blackwater NWR, Greenbelt Park, and Fredericksburg and Spotsylvania NMP



Site Representative/COR - Although the Site Representative and Contracting Officer Representative (COR) can be separate responsibilities assigned to two individuals, most often they are assigned to one person from the responsible agency of the treatment area.

The COR has the responsibility for the overall spray program. Although contract disputes may be deferred to the Contracting Officer, the COR has the authority to stop all spray activities until issues are resolved. As Site Representative, all matters dealing with the public, adjacent landowners or the press will be dealt with according to Standard Operating Procedures of the agency involved. Technical matters related to the spray project however, may be deferred to on-site Forest Service Technical Specialists if necessary.

The Site Representative or a designee must be present or immediately available during spray operations. If not on-site, the Forest Service Technical Specialist have the authority to stop all spray operations should any safety or contract concern warrant such action.

All notification of spray operations to personnel working or visiting the areas to be treated and any mitigating measures necessary to protect environmental sensitive areas is the responsibility of the Site Representative.

Spray Operations Technical Specialist(s) - The Technical Specialist(s) from the Forest Service will have the responsibility to help organize, implement and evaluate the suppression program. Upon the award of the contract by the Contracting Officer, the Technical Specialists will work directly with the contractor and COR to carry out the logistics of spray operations. These logistics include: 1) aircraft and equipment inspection, calibration and characterization; 2) helispot/staging areas site preparation; 3) treatment area familiarization; 4)treatment timing based on larvae/foliage development and desirable weather conditions; 5) oversee operational safety practices; 6) mixing/loading record keeping; and 7) evaluation of the overall treatment effectiveness.

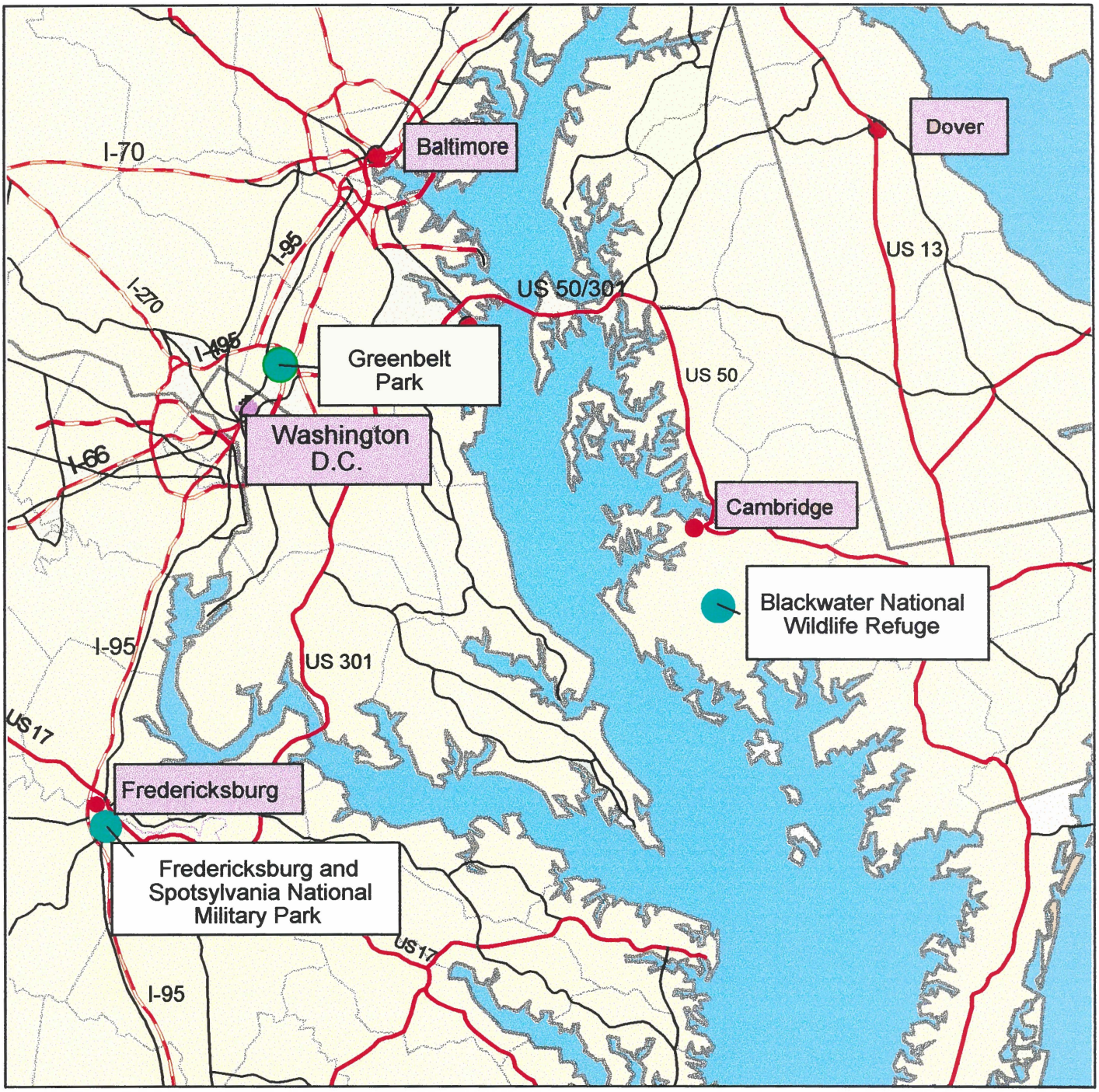
These activities will be carried out by several Forest Service employees but the overall responsibility will be the Project Coordinator/Technical Specialist or a designee who will report to the Site Representative/COR. The assigned Forest Service Technical Specialists are noted in the attached flow chart.

OPERATIONAL CONSIDERATIONS

INSECTICIDE RATE, NUMBER OF APPLICATIONS AND TREATMENT AREAS

A total of 1,332 acres will be treated at Blackwater NWR, 860 acres will be treated at Greenbelt Park and 300 acres will be treated at Fredericksburg and Spotsylvania NMP. Gypchek will be applied at the rate of 2 x 10" PIBs in a total mix of two gallons per acre per application. The second application should be applied 3 days after the first application at each project.

Figure 1. -- General location map of Greenbelt Park, Blackwater National Wildlife Refuge and Fredericksburg and Spotsylvania National Military Park.



SPRAY BLOCK SELECTION AND LOCATION

There are 13 treatment areas at Blackwater NWR, 1 treatment area at Greenbelt Park and 1 treatment area at Fredericksburg and Spotsylvania NMP (Figures 2-4). All of these sites are infested by gypsy moth and are valued for wildlife habitat or recreation/aesthetics. The boundaries of each spray block will be delineated on 7.5 minute topographic quadrangle maps.

HELISPOT/STAGING AREA

The helispot/staging area is shown in Figures 2-4 for each respective site. These areas will be roped off to keep unauthorized personnel from entering them.

CALIBRATION AND CHARACTERIZATION

The spray aircraft will be calibrated and characterized prior to the anticipated start date of the spraying.

SPRAY TIMING

The estimated start date for the spraying is April 24, ± 3 days. The spray window will extend approximately 14 days from the actual starting date which will depend upon larvae and foliage development within the treatment areas. The treatment should begin when the majority of the larvae are late first instar and expansion on the oaks is at least 20 percent.

WEATHER RESTRICTIONS

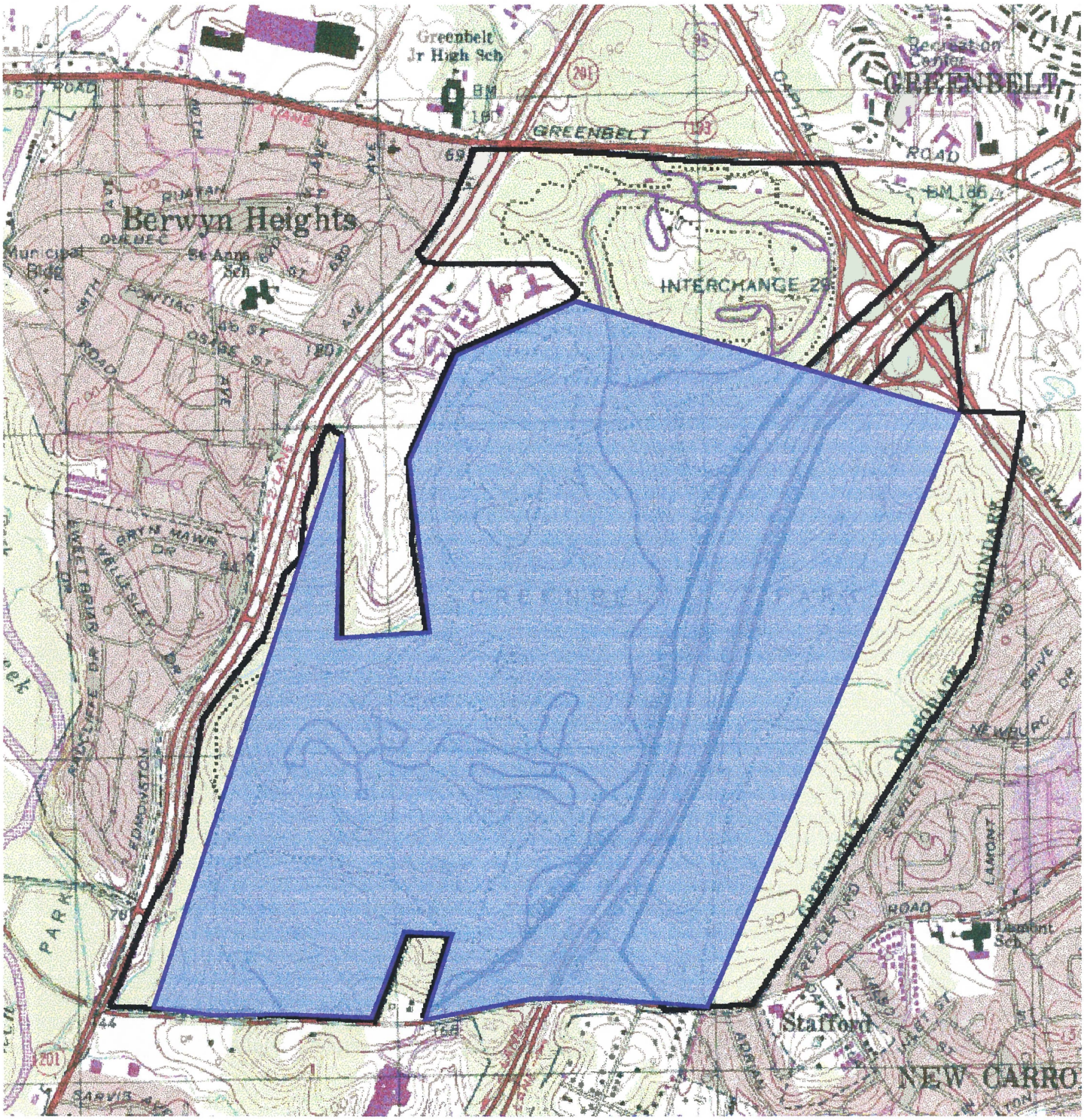
Desirable weather conditions during spray operations are critical to the success of the treatment. Weather conditions will be monitored at or near the spray blocks by Forest Service personnel. Spray operations will be delayed or postponed when conditions are less than acceptable for good spray deposition.

Acceptable conditions include: no inversions; wind speeds less than 10 mph and steady; temperatures between 35 and 80°F; relative humidity greater than 50 percent; and chance of rain within 24 hours of treatment is minimal.

TREATMENT MONITORING

Technical specialists from the Forest Service will be in or near the treatment areas during the time of treatment to observe and report the spray deposition. When inadequate deposition is reported to the load site, the spraying operation will be suspended until weather conditions are favorable for good deposition.

Figure 3.
Location of the 1997 gypsy moth treatment area at Greenbelt Park.



Technical specialists from the Forest Service will also view the down loaded DGPS printouts of each block. These printout will show if areas inside the treatment blocks were missed and if areas outside the treatment blocks were mistakenly sprayed. These printouts are kept as permanent records showing there areas treated.

The volume of the treatment will be monitored by keeping accurate aircraft load sheets. The actual amount of material sprayed should be within 5 percent of expected amount. The expected gallon amount for each application is equal to 2 times the number of acres to be treated.

COMMUNICATIONS

Communication between the helispot/staging area and the field crews will be conducted through portable FM radios on a predetermined ground frequency and or cellular telephones. Communications between the field crews and the airborne spray aircraft will be conducted through AM radios on a pre-determined air to ground frequency. For safety reasons, communications should be minimal with the pilot while spraying.

PESTICIDE HANDLING AND STORAGE

The Forest Service will provide the Gypchek and its carrier and a MSDS for the Gypchek and the components that form the carrier The Forest Service is responsible for obtaining unchlorinated water needed for the Gypcheck tank mix. The recipe for the Gypcheck tank mix is listed below.

.375 lb.lignosite + 16 fl. oz. feed grade molasses + 2.5 fl. oz. Bond
+ 108 fl. oz unchlorinated water + gypsy moth virus = 1 gallon tank mix

The lignosite, molasses and water may be pre-mixed the day before treatment. The bond and the virus should be added to the tank mix on the actual day and circulated at least 15 minutes before loaded into the spray aircraft.

WORKING RESTRICTIONS FOR PILOTS

The pilots for the projects will follow these guidelines:

Flight time will not exceed a total of eight hours per day.

Flight time shall not exceed a total of 42 hours in any six consecutive days.

Pilots accumulating 36 to 42 hours of flying in any six consecutive days shall be off duty the following full calendar day.

Within any 24-hour period, pilots shall have a minimum of ten hours off duty.

Duty includes flight time, ground duty of any kind, and standby or alert status at any location.

During any 14 consecutive days, pilots shall be off duty for two full calendar days. Days off duty need not be consecutive.

Pilot flight hours will count towards the cummulative flight time restrictions, regardless if the flight hours were accrued on other projects.

Please refer to the Safety Plan for further information.

RETREATMENT CONSIDERATIONS

The Site Representative/COR, after consulting with Forest Service personnel, has the option of retreating an area under the following circumstances:

Ground observations, spray cards and/or DGPS print outs reveal an unacceptable application by the contractor due to pilot error or mechanical malfunction.

More than .5 inches of rain within 24 hours of treatment or the intensity of the rain within 12 hours was such that washoff was likely.

POST TREATMENT EVALUATIONS

The effectiveness of aerial application of Gypchek at these three sites will be evaluated using a post-suppression aerial defoliation survey and an egg mass survey. The treatments will be considered successful at a site if noticeable defoliation occurs on less than 20 percent of the treatment area and residual gypsy moth populations are reduced below the treatment threshold of 750 egg masses per acre on 80 percent of the treatment area.